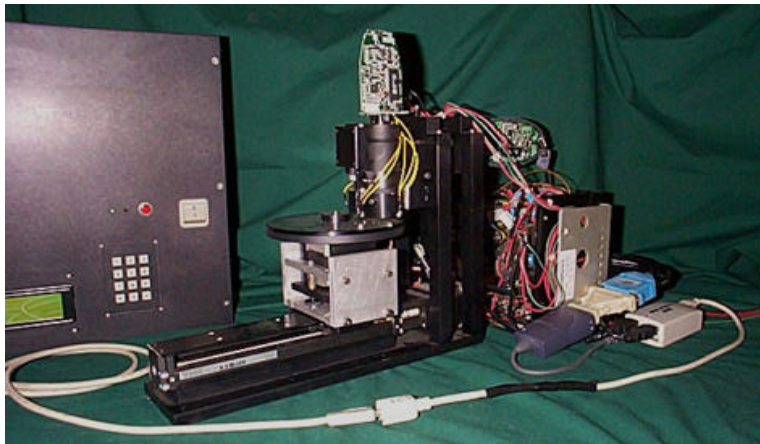


FACT SHEET

AEG Commercializes NASA-Licensed Automated Particle Fallout Monitor



The Aerospace Engineering Group (AEG) of IDEA, LLC is commercializing the Active Particle Fallout Monitor (APFM), an automated monitoring system that will benefit both NASA and private industry.

The Beltsville, Maryland-based company joined with NASA in January 1999 at Kennedy Space Center (KSC) in a Cooperative Agreement to commercialize the KSC-developed prototype. The private and government sectors targeted for marketing of the commercial APFM include the aerospace, aeronautical, semiconductor processing, electronics fabrication, medical industries, or anywhere that space flight hardware is processed or fabricated. AEG believes there is no limit to the types of industries that would benefit from the APFM. Any industry or business that requires or has an interest in monitoring the level of fallout contamination will be targeted. This could also potentially include hotels, apartment complexes, corporate buildings, or any environment where the quality of air is of a concern to occupants to the point that facilities managers want to provide a level of assurance as to air quality. AEG's marketing plan calls for the production and sales of 300 units in early 2001.

AEG enhanced the innovation after it set up an office and laboratory operations at the Palm Bay, Florida Open Access Cleanroom through negotiations with the Florida/NASA Business Incubation Center. The company has experience in developing contamination-sensitive spaceflight hardware and is aware of the potential problems that can result from fallout. The one-year agreement called for AEG to evaluate the system capability and performance, its market potential, quantify system reliability, and

improve system performance. This work culminated in production of a manufacturing prototype and accumulation of data contained in a final project report that was furnished to NASA.

NASA is using AEG's new APFM in the KSC Space Station Processing Facility (SSPF) to monitor International Space Station (ISS) components being prepared for flight in cleanrooms. Validation testing of the system in the SSPF demonstrates that the technology performs as well and better than existing methods of particle detection. Particle fallout is a source of contamination that is a concern by NASA and aerospace-related industries. Depending on the type and size of the particles, fallout can be a source of contamination that could affect the performance of sensitive spaceborn instruments and support equipment. NASA at KSC and other centers have been aware of this issue for several years and have sought to develop different types of monitoring systems that are designed to quickly alert spacecraft and spaceflight hardware developers and customers of possible fallout problems.

NASA developed and patented a particulate fallout contamination detection instrument that directly images, sizes, and counts contamination particles. AEG obtained license rights to it and another patented KSC-developed technology to help them with the project. One is an exclusive license to commercialize the "Detector for Particulate Surface Contamination" (now called the APFM), developed by the NASA Contamination Monitoring Laboratory (CML) and the former KSC Engineering Support Contractor I-NET, Inc. The second license is non-exclusive, for the "Particle Fallout/Activity Sensor," also developed by the CML and I-NET.

Traditionally, measurement of the particle fallout contamination levels in a facility is accomplished by placing a witness plate in the area that particle fallout is to be measured for several weeks and then transporting it to a laboratory where particles are manually counted under a microscope. This process is tedious and time-consuming and prone to human error as well as errors caused by handling and transportation of the witness plates.

The APFM is a quantitative (it directly counts particles) particle fallout monitor that measures the size and number of particulates that are collected on a witness surface representing contamination that collects on surfaces at the point of use. The APFM can measure particles as small as five micrometers in diameter and calculate their contribution to percent area coverage (surface obscuration). The instrument correctly processes irregularly shaped particles as well as fibers. The instrument provides a quantitative measure of the cleanliness of a room according to MIL Standard 1246.

The APFM provides quantitative, near real-time measurement of particle fallout contamination right in areas of concern and this allows manufacturing personnel to take actions to eliminate this contamination before it becomes a big problem. The APFM consists of two units - a processor and associated sensor heads. It works by using two CMOS imaging sensors (cameras) to look at a surface and determine the number and size of particles depositing on that surface. The APFM is able to see particles from 5

microns up to 750 microns in size. One of the two image sensors looks for small particles and the other for large particles.

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